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THE ECONOMIC SIGNIFICANCE OF ASPECTS OF CANADA'S INTERNATIONAL PAYMENTS

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ABSTRACT

This study seeks to clarify a number of issues of current concern that are related to the Canadian balance of payments. These issues are analyzed within a theoretical framework the essence of which is that, in the long run, the balance of payments reflects savings, investment and portfolio balance choices. In the short run, however, exogenous shocks and the effects of business cycles may exert a preponderant influence on particular components of the balance of payments. Short-run equilibrium is achieved in general by an induced movement of short-term capital which may have implications for the exchange rate.

In the long run, current account deficits are not sustainable if they correspond to declining net real domestic wealth per capita. To judge whether this is the case, savings and investment data are examined. Two adjustments should be made to published savings, investment and balance of payments data: removal of the inflation premium in net interest payments, and inclusion of net retained earnings of foreign firms as a payment. The adjusted data do not suggest that the Canadian current account has been on a trend towards unsustainably large deficits, since domestic savings have remained relatively high.

Another important issue is the effect on the balance of payments of Canadian takeovers of foreign-owned firms. Although it is too early yet to say whether the repatriations in 1981 are likely to yield a net national gain in the long run, published net services payments will be increased for years unless the real rate of return on equity is substantially above the real interest rate.

Finally, because the cyclical behaviour of the balance of payments will vary depending upon the underlying sources of the cycle, it does not seem advisable to base macroeconomic policy on some target level of the current account balance. Policies that foster appropriate incentives for domestic saving and investment are more likely to solve the basic problems than are measures designed merely to alter transactions with non-residents.

RÉSUMÉ

La présente étude a pour objet de clarifier certaines questions d'actualité concernant la balance canadienne des paiements. L'analyse de ces questions se fonde sur un cadre théorique selon lequel la balance des paiements est influencée à long terme par les décisions des agents économiques en ce qui a trait à l'épargne, l'investissement et la composition des porte-feuilles. A court terme, toutefois, les chocs exogènes et les cycles économiques peuvent exercer une influence prépondérante sur certaines composantes de la balance des paiements, et celle-ci s'équilibre en général par le biais des mouvements de capitaux à court terme, qui peuvent à leur tour avoir une incidence sur le taux de change.

Un déficit permanent de la balance des paiments courants n'est pas tenable s'il correspond à une diminution nette de la richesse réelle par habitant. Pour déterminer si c'est le cas, il faut examiner les données relatives à l'épargne et à l'investissement. Ces données, de même que les statistiques de la balance des paiements, doivent faire l'objet de deux corrections: il faut soustraire du montant net des paiements d'intérêts la prime d'inflation et ajouter aux paiements le chiffre net des bénéfices non répartis des entreprises étrangères. Les données corrigées n'indiquent pas que la balance canadienne des paiements courants a eu tendance à enregistrer des déficits intenables, car le taux de l'épargne intérieure est resté relativement élevé.

Un autre point important est l'incidence que les prises de contrôle d'entreprises étrangères par des Canadiens ont sur la balance des paiements. Il est encore trop tôt pour savoir si, à long terme, le Canada retirera un bénéfice net des prises de contrôle effectuées en 1981, mais on sait déjà que les chiffres publiés des paiements nets au titre des services vont augmenter dans les années à venir à moins que le taux de rendement des capitaux investis sous forme d'actions ne soit de loin supérieur aux taux d'intérêt.

Enfin, comme le comportement cyclique de la balance des paiements diffère selon les forces qui sous-tendent le cycle économique, il ne semble

pas judicieux d'orienter les politiques macro-économiques en fonction d'objectifs quant au solde de la balance courante. Les politiques encourageant l'épargne et l'investissement au pays sont plus susceptibles de résoudre les problèmes fondamentaux que les mesures visant simplement à influer sur les transactions avec les non-résidents.

1 INTRODUCTION

The implications of current account deficits and the level and composition of international indebtedness for Canadian public policy have been debated for some time.[1] The fact that the current account has been in substantial deficit has been a major point of issue. In particular, commentators have expressed concern that the intensified rate of accumulation of international liabilities experienced in the 1970s was undesirable even if sustainable. Also, it has been argued that cyclical problems have been exacerbated by the behaviour of the balance of payments and its effect on the exchange rate: wider current account deficits have been alleged to cause losses of output and employment. More recently concern has been aroused by the dramatic increase in outflows of direct investment in 1981.

The central purpose of this paper is to clarify analytical aspects of these issues by using a particular theoretical framework, the essence of which is that the long-run evolution of the balance of payments is a reflection of consumption, investment and portfolio balance choices. In the short run, however, exogenous shocks and the effects of business cycles may often exert a preponderant influence on components of the balance of payments, requiring accommodating movements in short-term capital flows. The extent of the exchange rate changes implied by these movements depends on the expected persistence of the shocks as well as on their size.

It is well to bear in mind two limitations of the balance of payments accounts. The first is that certain accounting conventions are not well suited to the analysis of some economic problems. Adjustments may be appropriate to remove the inflation premium from published net nominal interest payments, and to include net retained earnings as a service payment to foreign-owned corporations.[2] An important case in point is the

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[1] Recent contributions include Hudson (1978), Dunn (1978), Donner and Peters (1979), Barber and McCallum (1980), Mackness (1981) and Bank of Montreal (1981).

[2] In official U.S. GNP and balance of payments statistics, corporate retained earnings are now explicitly included in measured foreign transactions.

analysis of the implications of the wave of corporate takeovers in 1981. The second limitation is that the balance of payments, even when adjusted as described, is not itself a direct gauge of economic welfare. The current account balance, for example, contributes only indirectly to economic welfare measured in terms of the stream of consumption enjoyed. A focus on the balance of payments in itself as a policy problem or policy goal is apt to result in an emphasis on measures to control international trade and capital flows -- by direct government intervention, by changes in taxes and subsidies or by manipulation of the exchange rate. Such measures ought to be evaluated in terms of their contribution to ultimate goals, not just to the balance of payments.

This essay is organized on the following lines. In section 2 we present our view of the nature of short-run equilibrium in the balance of payments and its exchange rate implications. We discuss why the current account and basic balance[3] have been found in existing econometric studies to have significant effects on the exchange rate while official intervention has not, and why the correlation between balance of payments variables and the exchange rate is not very stable.

The accounting framework and criteria for assessing the sustainability of actual payments imbalances are outlined in section 3. Our argument is that in the long run it is appropriate to regard a current account deficit as signifying a real economic problem (and as being unsustainable) only if it corresponds to disinvestment of real domestic wealth per capita. If, by contrast, a deficit results from an abundance of domestic investment opportunities and a rapidly growing capital stock, there is no such problem. From this viewpoint the trends in Canadian current account, savings and investment data do not suggest that the current account deficits of recent years are unsustainably large.

Section 4 contains a discussion of the implications for the current account of Canadian takeovers of foreign-owned corporations. Both national income and the adjusted current account, when adjusted for inflation and retained earnings, improve when the rate of return on repatriated equity

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[3] Current account balance plus net long-term capital.

is greater than the real interest rate. Although it is too early yet to say whether the 1981 repatriations are likely to yield a net national gain in the longer run, it seems likely the published current account will be adversely affected for a number of years even if in real terms the takeovers are moderately favourable to Canada.

We conclude the essay with a discussion in section 5 of cyclical aspects and a critique of the current account as a policy objective.

2 EXCHANGE RATE IMPLICATIONS OF SHORT-RUN EQUILIBRIUM

Trade and direct investment flows take considerable time to adapt fully to exogenous shocks which therefore create a requirement for some offsetting flow of short-term capital.[4] To induce the required flow, the expected return on Canadian dollar assets must be at an appropriate level relative to that on assets denominated in other currencies. For example, to induce a short-term capital inflow the Canadian interest rate plus the expected change in the exchange value of the Canadian dollar would normally have to increase relative to the interest rate abroad. If we abstract from changes in the interest rate,[5] a decrease in the spot value of the exchange rate relative to its expected future value is implied.

Exchange rates are determined in asset markets by the interplay of the demand for assets denominated in different currencies and the actual and prospective stocks of those assets. For an economy of moderate size like Canada's, the net flow of foreign currency required as the counterpart to a payments imbalance in any single year is very small in relation to existing stocks of internationally mobile funds. A large deficit in the current account or the basic balance confined to a few quarters would result in only a minor increase in the risk premium on Canadian dollar assets. That is, the expected return on Canadian dollar claims relative to that on claims denominated in other currencies need increase little. If interest

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4 Cf. Helliwell and Lester (1976).

5 The effect of changes in interest rate differentials is the focus of discussion in the Bank of Canada Review, January 1980.

rates on all claims were unchanged a modest downward movement of the dollar below its expected value would suffice.

The fact that changes in the current account are often accompanied in the same year by significant exchange market pressure is to be explained by the effect on expectations of published changes. Whereas the actual flow is a small proportion of existing stocks in the short run, it would, if it lasted, cumulate over time into a significant proportion. Furthermore, empirically there is a sufficiently high degree of persistence that the most recently observed current account balance is a useful indicator of future balances. A sudden increase in one year's trade deficit raises the spectre of an eventual increase in Canada's net indebtedness that is a large multiple of the single year's increase, and hence of a significant rebalancing of international portfolios in the future. The expected equilibrium spot exchange value of the Canadian dollar might therefore be revised downward substantially. This would translate into immediate sharp downward pressure on the spot value, since to induce the required inflow the current spot value must fall relative to the expected value. Empirically, it is the revision in expectations that causes most of the variance in exchange rates. Expected changes (as gauged from forward spreads) account for only a small fraction of the variance.[6]

This line of reasoning can explain the widespread finding with monthly and quarterly data that sterilized exchange market intervention[7] does not exert a statistically significant effect on exchange rates.[8] A $1 billion decrease in the trade balance in a quarter is conceivably a forewarning of a permanent downward shift in net exports, whereas a $1 billion official purchase of foreign exchange in a quarter is no more than an indication of that period's intervention strategy, so that although the same flow goes

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6 Isard (1981) presents convincing evidence on this point.

7 "Sterilized" in the sense that an official purchase (sale) of foreign exchange is accompanied by an equal sale (purchase) of domestic financial assets such that the cash base of the banking system is not changed.

8 See, for example, Genberg (1981). To our knowledge, no tests exist on the effectiveness of daily operations designed to lessen very short-run variability of exchange rates.

through the market, the former puts much stronger upward pressure on the price of foreign exchange.

While the current account and/or basic balance variables explain part of the behaviour of the Canadian dollar,[9] they are only rough proxies for the sources of exchange market pressure. As regards pressure on the risk premium emanating from the actual absorption of foreign currency assets into portfolios, the relevant aspect is whether participants in the exchange markets are made to alter their risk exposure. Bonds issued abroad by Canadian entities, denominated in foreign currencies, have in recent decades been the major source of capital inflow. This has alleviated a good part of the upward pressure on the risk premium that non-residents would require to take up willingly an equivalent amount of Canadian dollars. Likewise, changes in components of the short-term capital flow may deflect exchange market pressure (as in 1981, described in Section 4). Hence the current account and the basic balance may in some periods fail to measure adequately net foreign currency absorption for the purpose of exchange rate modelling. As regards expectations, the greater the variance of transitory components and the greater the proportion of announced changes already anticipated on the basis of prior data, the less is the contemporaneous correlation between the balance of payments and the exchange rate. Only so long as they bear a stable relationship to the perception of underlying exogenous changes do balance of payments variables help identify the components of systematic revisions to the expected exchange rate.

3 CURRENT ACCOUNT DEFICITS IN THE LONGER RUN

In this section we discuss whether a persistent increase in the current account deficit is the result of high consumption, which ipso facto might be unsustainable, or high investment which, if it yields normal returns, is sustainable in that it adds to the future level of consumable output.

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[9] E.g., Haas and Alexander (1979) and Freedman (1979b).

The usual national income accounting identity can be rearranged to show that investment is the sum of gross domestic saving (GNP less consumption less government spending on goods and services) and gross saving by non-residents (the negative of the current account balance). In order to equate real saving to the change in the net real stock of wealth in a given period it is necessary to make two adjustments to the published nominal current account balance before deflating by the price level. The first is to reduce non-resident saving by the amount of any inflation premium in net interest payments.[10] This early repayment of part of the real value of interest-bearing debt is akin to a capital repayment and thus is neither a current transaction nor a new flow of saving. The second adjustment is to include as part of the flow of non-resident saving the retained earnings in Canadian firms accruing to non-residents and to exclude the retained earnings in foreign firms accruing to Canadians. On a net basis these retained earnings increase the stock of non-resident wealth rather than domestic wealth. Equivalent adjustments should be made to both GNP and the capital account as well as to the current account of the balance of payments. It should be noted, though, that the basic balance of payments is changed only by the adjustment for interest payments on short-term debt since for bond interest the adjustment to the current account is matched by an offsetting adjustment to long-term capital.

A given level of consumption per capita is unsustainable in the long run if it is achieved by drawing down domestic wealth per capita from one business cycle to the next. Domestic wealth is defined as the sum of the value of physical capital and the value of natural resources in the ground. The motive for saving in a long-run context is taken to be the accumulation of wealth to maintain or increase the level of sustainable consumption.

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[10] This point has been made by Freedman (1979), Jump (1980) and Barber and McCallum (1980), although studies by these authors did not explicitly consider short-term debt. The calculations of the inflation premium in this paper assume real rates of interest of 3.5 per cent on long-term debt and 2.44 per cent on short-term debt. The basis for these assumptions is explained in Longworth (1980). Given the much higher real rates of interest in 1981, these assumptions would have to be revised to do the calculations for that year.

If domestic saving is such that the level of domestic wealth per capita is at least maintained, then a given current account deficit can persist so long as it can be financed by borrowing abroad, which should not be a constraint if it is a moderate proportion of GNP. There is no necessity for the indebtedness in aggregate ever to be paid back.

It is incorrect to judge the appropriateness of the current account deficit according to whether the corresponding foreign borrowing was undertaken directly for consumption purposes or for investment purposes. It is the total of funds used (for consumption, investment or net foreign saving) that is relevant, not the uses of funds from a particular source. Given the level of total domestic savings and the current account deficit it makes no essential difference for example whether governments finance their entire deficits at home and some firms borrow abroad or the governments finance some portion of their deficits abroad and more firms borrow at home.[11]

The data for Canada do not indicate a trend into an unsustainably large current account deficit. The current account balance as a percentage of GNP is charted in Figure 1, on published and adjusted bases -- the series for the inflation premium adjustment alone and the series fully adjusted for both retained earnings and the inflation premium are shown separately.[12] GNP is correspondingly adjusted. Canada has had a surplus on the fully adjusted current account in only one year in the past twenty-five, and hence the stock of net liabilities to the rest of the world has been growing steadily. The retained earnings adjustment increases the deficit but not its upward trend, whereas the inflation-premium adjustment decreases both the deficit and its trend, especially since 1975.

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[11] At least if future effects of differences between interest rates paid by governments and by firms are neglected.

[12] The retained earnings adjustment applies only to foreign-owned corporations in Canada. Data on retained earnings accruing to Canadian equity in firms abroad and to foreign equity in Canadian-controlled corporations in Canada are unavailable.

Figure 1

CURRENT ACCOUNT BALANCE : PUBLISHED AND ADJUSTED

As a per cent of GNP

At a given date the stock of real net foreign indebtedness (aside from capital gains or losses arising from relative price changes) is just the cumulated value of all prior constant-dollar balances on the adjusted current account. Canadian real net indebtedness as a percentage of real GNP,[13] portrayed in the market value approximation line in Figure 2, declined from 1960 until 1973, but this trend was arrested by the big current account deficits of 1975-79, which were largely financed by bond issues. The ratio of the book value of direct investment liabilities to nominal GNP does not take account of changes in the market value of existing equity, which has increased substantially over time. Thus while the market value ratio increases quite markedly to reach a level in 1977 near the previous peak in 1961, the trend in the book value ratio continues to decline after 1973.

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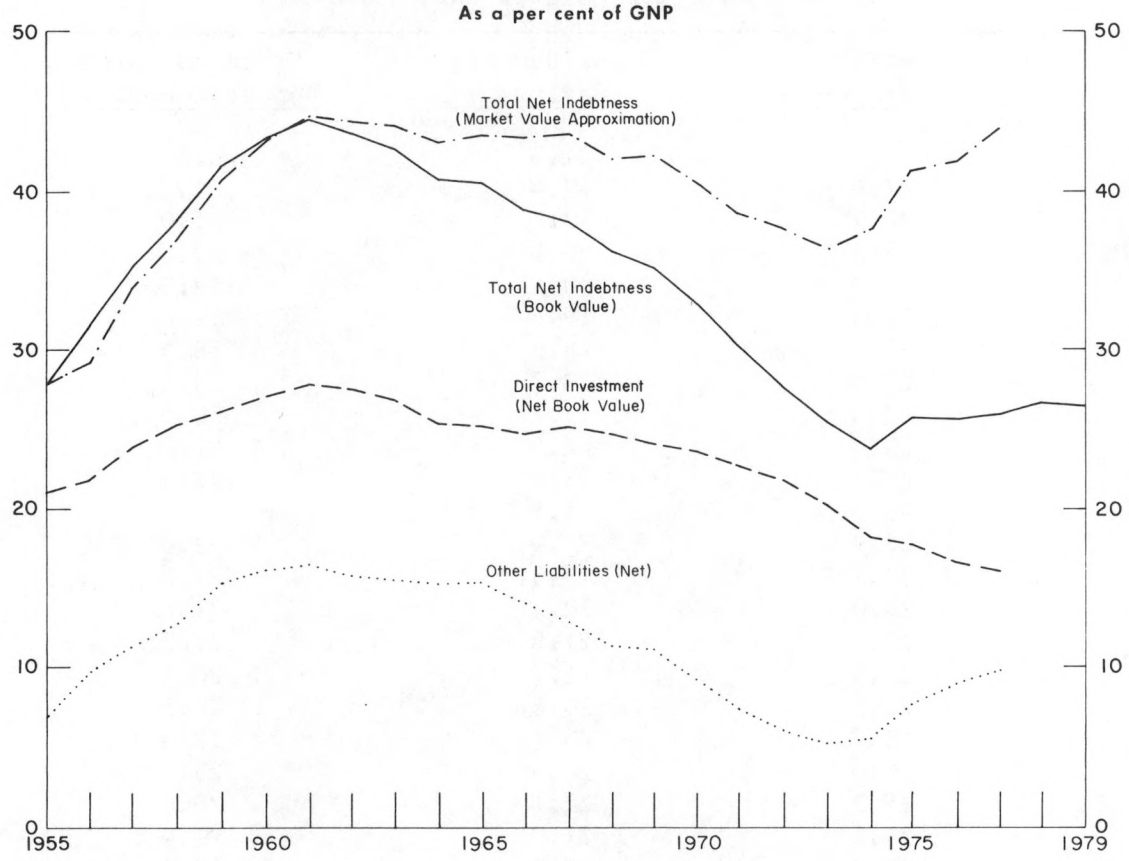
[13] The constant-dollar balances on the adjusted current account were cumulated from the price-deflated book value of net indebtedness in 1955.

Figure 2

CANADIAN NET INDEBTNESS TO FOREIGNERS

As a per cent of GNP



These data reflect underlying movements in saving and investment. Aggregate domestic savings ratios on adjusted and unadjusted bases, along with the ratio of investment to GNP, are shown in Table 1. While little systematic movement is discernible in the adjusted ratios, the unusually strong current account balances in the early 1970s were associated with low investment ratios rather than high domestic savings ratios. The deficits of 1977 and 1978, on the other hand, reflected low domestic savings ratios[14] and closer to normal investment levels. The 1979 domestic savings ratio adjusted only for the inflation premium (not shown in the

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[14] Even in the short run, there are situations where low domestic savings may indicate a problem. For example, at near-full capacity an increase in the overall government sector deficit will tend to decrease total domestic savings and worsen the current account deficit.

Table 1

GROSS INVESTMENT AND GROSS DOMESTIC SAVINGS
As a per cent of GNP

	Gross Investment	Gross Domestic Savings	Gross Adjusted Domestic Savings
1955	23.6	21.3	n.a.
56	27.6	23.4	22.2
57	26.4	22.2	21.0
58	23.2	20.1	19.5
59	24.0	20.1	19.3
1960	22.6	19.6	19.0
61	21.1	18.9	18.4
62	22.5	20.7	20.1
63	22.3	21.2	20.5
64	23.3	22.5	21.7
65	25.7	23.6	22.5
66	26.5	24.5	23.8
67	23.9	23.0	22.0
68	22.7	22.3	21.5
69	24.0	22.6	21.6
1970	20.7	21.8	21.2
71	21.5	21.7	20.6
72	22.2	21.6	20.5
73	23.9	23.7	22.3
74	26.0	24.6	23.2
75	24.3	21.1	20.0
76	24.2	21.9	21.0
77	22.8	20.5	19.7
78	22.6	20.3	n.a.
79	24.7	22.6	n.a.
1980	22.8	21.9	n.a.
Average	23.7	21.8	21.0

table) was above average, but so was the investment ratio.

In this longer run context an illustration can be given of why the current account is a less useful indicator of welfare than GNP. Consider a change that increases real income in Canada, for example a permanent improvement in the terms of trade brought about by an exogenous increase in the international price of our exports. GNP increases permanently, but the current account balance as a percentage of GNP need not decline because

domestic spending, including spending on imports, will increase roughly proportionately. The increased value of exports would be approximately offset by increased imports as residents enjoyed their higher real incomes.[15]

4 EFFECTS OF CORPORATE REPATRIATIONS

The year 1981 saw a remarkable wave of direct investment outflows in consequence of corporate takeovers, many encouraged by measures in the National Energy Program intended to promote Canadian ownership in the energy sector.

Repatriation of firms involves a switch in the composition of national indebtedness from equity to interest-bearing form. The level of indebtedness is not immediately altered; the direct investment outflow is financed by an inflow of borrowing. In 1981 the takeovers were financed in large part by U.S. dollar loans from banks directly to the Canadian firms taking control, a major factor in the $15 billion identified net short-term capital inflow.

It is to be stressed that if the Canadian purchasers of foreign-owned firms had not themselves taken on foreign currency loans, net borrowing would still have registered an increase of similar magnitude since the direct investment outflow created a financing requirement in the balance of payments that had to be satisfied. The fact that the foreign currency borrowings were made by the purchasing firms themselves did however alleviate some downward pressure on the Canadian dollar, since otherwise non-residents would in general have converted the proceeds from the sale of firms out of Canadian dollars.

Downward pressure on the Canadian dollar was nonetheless evident in 1981, particularly in July. It was exacerbated by confusion in financial markets about the meaning of the unprecedented outflows for the future

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[15] Compare Sachs's analysis of the effect on OPEC absorption of goods and services subsequent to the 1973-74 oil price hike.

shape of the balance of payments,[16] which we attempt to clarify forthwith. For simplification we abstract from feedbacks through induced changes in economic activity and relative prices.

The effect of takeovers on the adjusted current account depends on the rate of return on equity defined as dividend payments plus the rate of retained earnings calculated as a percentage of the value of equity. Assuming that earnings can be reinvested at the same return as that on existing assets, that rate of return is roughly equal to the dividend rate plus the rate of real capital gains resulting from the retained earnings. If this rate is greater than the real interest rate then, other things equal, a corporate repatriation creates equivalent increases in adjusted GNP and the adjusted current account.

It is too early yet to judge whether in this sense the 1981 direct investment outlays will yield a net real gain to Canada in the future. Casual empiricism suggests that at the prices paid (which included some sizeable premiums) the current dividend yield averaged, in round numbers, perhaps 2 per cent and the rate of retained earnings perhaps 4 per cent, for a yield on equity of 6 per cent.[17] The likely outcome is in fact highly uncertain since it depends on such volatile factors as world energy prices, energy demand, resource discoveries, technological developments and so on, as well as on the outcome for real interest rates. If the yield turns out to be 6 per cent and the real interest rate less than 6 per cent, then adjusted GNP and net services payments will be improved.

To continue the analysis, let us suppose that the equity yield and the real interest rate are equal. In these circumstances the switch from equity to interest-bearing indebtedness is apparently a neutral portfolio rearrangement with negligible real effects. But the published GNP and current account will show a deterioration because of the conventions that retained earnings are not counted and that the inflation premium is counted. Both conventions work in the direction of increasing the size of

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[16] Mackness' commentary is one indication of prevailing worries.

[17] An investor might then be assumed to expect a 2 per cent dividend and 4 per cent real capital gain, if the figures were correct.

the current account deficit when there is a purchase of equity. The stream of retained earnings is ignored, while the stream of interest payments is swollen by payments that are really repayments of debt. In 1981, when the short-term borrowing rate averaged (say) 19 per cent and the dividend yield (say) 2 per cent, the impact on the published current account of $1 billion-worth of takeovers would run at an annual rate of about (.02 - .19) = -.17 billion dollars.

Nor is this the end of the story. It can be demonstrated that if the return on equity is less than or equal to the real interest rate, there is never a positive impact on published net services payments.[18] This may appear paradoxical. After all, with constant inflation the nominal dividend yield grows at a compound rate, whereas the nominal interest rate is given. To take a simple numerical example, suppose that the dividend yield is 5 per cent, the rate of inflation 10 per cent and the nominal interest rate 15 per cent. Also suppose there are no retained earnings.[19] The real interest rate is thus equal to the equity yield. Now suppose a $1 billion repatriation takes place at those yields. The published current account would at once worsen at an annual rate of about $100 million. At the postulated annual growth rate of 10 per cent, the nominal dividend yield reaches 15 per cent in about 11 years, the same level as the interest rate in our example. It is however a fallacy to conclude that the crossover point to positive cash flow is therefore 11 years. Under the assumptions we have made, a crossover point never arrives. During the years when the cash flow is negative, there is a corresponding accumulation of nominal liabilities against Canadian residents on which further interest payments are to be made: interest payments as well as dividends grow at a compound rate. The maintenance of the balance of payments identity ensures that Canadian entities in total increase their net borrowing, regardless of the financial arrangements of the parties to the takeover.[20]

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[18] A proof is in the Appendix.

[19] The example easily generalizes to cover non-zero retained earnings.

[20] Recall that we are disregarding any balance of payments changes induced by a change in the exchange rate.

Profiles over time of net investment income on a published basis for various hypothetical yield/inflation combinations are given in Table 2. The first row gives the combinations considered in the example above. Even though the returns on equity and bonds are the same, a switch of indebtedness to the former from the latter causes the nominal published deficit to increase monotonically. After 20 years a switch of $1 billion creates cumulated investment income deficits of $6.3 billion. In the second row of Table 2, repatriation of equity is assumed to be a major benefit to Canada (a real interest rate of zero and a 5 per cent real return on equity). Adjusted GNP and current account show immediate gains from a takeover in these circumstances but, as can be seen from the table, published net investment income shows a negative impact for 10 years. Only after 43 quarters does it become positive, by which time an original investment of $1 billion would have generated cumulated net current payments totalling $.4 billion. Thus under these very favourable assumptions there is a prolonged and significant increase in net payments as conventionally measured. The final row gives results for a case that is favourable to Canada, but with an equity yield just 1 per cent above the interest rate. This sort of margin is in the ballpark of what might be expected given our current fragmentary information. The cross-over from negative to positive net income effects now occurs in the sixty-first year--for all intents and purposes not within the foreseeable future.

The foregoing examples imply that only with a rather favourable outcome will the 1981 wave of repatriations have a positive effect on investment income as measured by Statistics Canada before the end of this century. In any event, the negative impact on published net invisibles payments is of much longer duration than one might at first think.[21]

This raises the possibility that movements in the published current account might in the next few years exert downward pressure on the dollar

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[21] The Bank of Montreal study, for example, which apparently makes the error referred to above, puts the duration of the negative impact at 6 years under assumptions that in fact make it permanent.

Table 2

PROFILES OF NET PUBLISHED RECEIPTS FROM A CANADIAN PURCHASE OF ONE DOLLAR EQUITY FROM A FOREIGN OWNER*

Illustrative Assumptions			Simulated profile: net receipts ($) (a) in current year; (b) cumulated to year end; (c) adjusted current account**						
Nominal Interest Rate	Inflation Rate	Dividend Rate		Year 1	Year 5	Year 10	Year 15	Year 20	Break-even Year
(Per cent per annum)									
15.	10.	5.	(a)	-.10	-.15	-.25	-.42	-.68	never
			(b)	-.10	-.64	-1.69	-3.40	-6.30	(monotonic growth)
			(c)	0	0	0	0	0	
10.	10.	5.	(a)	-.05	-.04	-.01	.08	.30	year 11
			(b)	-.05	-.24	-.38	-.18	.82	-.38
			(c)	.05	.08	.13	.21	.34	
10.	9.	2.	(a)	-.08	-.11	-.16	-.23	-.33	year 61
			(b)	-.08	-.48	-1.19	-2.20	-3.65	-41.39
			(c)	.01	.02	.03	.04	.07	

* Computed quarterly to reduce approximation errors in compounding. The formula used is

$$CA_t = d(1+\pi)^{t-1} - (r+\pi)\left(1 - \sum_{i=1}^{t-1} CA_i\right)$$

where CA_i is net receipts at time t, d is the dividend rate, π the inflation rate and r the real interest rate.

** The rate of retained earnings is assumed to be zero.

unwarranted by underlying factors. To the extent that the exchange rate is reduced, and that negative cash flows have a deflationary effect on domestic aggregate demand, some increase in net exports will be induced, reducing the impact on the current account of the takeover-related service deficits calculated above.

5 STABILIZATION POLICY AND THE CURRENT ACCOUNT

In analyzing the current account with a view to forming stabilization policy, each of the various forms of writing the current account identity has a certain convenience. Consider these four: exports minus imports, saving minus investment, output minus absorption, and capital outflows minus inflows. In the short run, use of the first form is expedient since variations in the net trade flow come primarily from exogenous shocks or predetermined variables, and capital flows must adjust (section 2). Long-run analysis is best framed in the second form, given that the current account is a reflection of underlying decisions about saving and capital accumulation (section 3). However, there is some controversy about which is most convenient for cyclical analysis; it arises from differences in views about causality.[22]

Our view is that the impulses that cause the current account to change over the cycle are not sufficiently uniform that any single identity has overall superiority for short- to medium-run analysis. For example, an increase in the deficit caused by an exogenous increase in domestic capital formation can obviously be viewed as an increase in investment relative to saving. But it may be equally enlightening to view it as an increase in domestic absorption of tradeable goods, as an increase in demand for imported machinery and equipment or even as an increase in demand for foreign capital. Furthermore, in the medium run endogenous adjustments in all components of the balance of payments stem from endogenous changes in income. Statements such as "the capital account determines the current account"[23] (or vice versa) are misleading as generalizations. Only by

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[22] See for example McKinnon (1980), Sachs (1981) and Cuddington (1981).

[23] See, e.g., Lipsey (1978).

empirical investigation can the predominant components at the source of a particular cycle in the balance of payments be identified.

It is helpful to bear in mind the savings-investment identity when policies that concern the current account are at issue. In general individuals prefer a smooth path of consumption.[24] The sheltering of consumption from cyclical variations in income will usually result in cyclical fluctuations in the current account. If a cycle stems from changes in foreign economic activity the current account movement will be positively correlated with GNP, if from changes in domestic spending, the correlation will be negative. In either case, movement in the current account reduces the variance of domestic income.[25] It immediately follows that a constant balance is not a desirable target for short-run policy, since maintaining it would mean that variables of more interest such as consumption, output, employment and the rate of inflation would be subjected to more severe fluctuations.

Current account objectives expressed in cyclically adjusted terms are only superficially more promising; they suffer from requiring a lot of information ex ante that is not in reality available. The appropriate policy is known only after a cycle is complete. For example, knowledge of whether a cycle in progress is domestically-led or export-led is crucial for determining the direction of the "cycle adjustment" during a particular phase.

To the extent that a current account imbalance does signify the existence of an underlying problem, policy changes addressed to domestic saving and investment are more directly relevant than are policy changes that alter international transactions specifically. Government influences the net balance of saving and investment both directly by way of its own dissaving (or saving) and indirectly by way of the effects on private sector decisions of fiscal arrangements, financial regulation and legal

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[24] All modern theories of consumer behaviour embody this notion, be it via habit persistence, permanent income, or life-cycle planning.

[25] Akin to the "foreign trade leakage" that reduces the investment multiplier in familiar Keynesian analysis.

structure, and the degree of monetary stability.[26] If the government deficit is judged to be within reasonable bounds and if adequate incentives are provided for private saving and investment then the current account cannot in the longer run be considered a separate source of concern for policy. By the same token, a sustained worsening in the adjusted current account will often indicate the need for some basic changes in fiscal, regulatory and monetary policies.

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[26] Examples of policies that stimulate personal saving in Canada are the tax exemptions on RHOSPs, RRSPs and the first $1,000 of interest income. The absence of binding usury ceilings and Regulation "Q"-type rules has also benefited savers in Canada relative to those in the United States. The entire tax system of a country, from the schedule of marginal tax rates for individuals to the treatment of depreciation for corporations, may have a significant impact on the savings rate. The rate of inflation interacts with the tax system to change desired saving. Thus monetary policy may have an effect on saving even in the long run. Artus (1979) discusses structural differences among the United States, Japan and Germany which lead to differences in their savings behaviour and hence to differences in the evolution of their current accounts.

APPENDIX

The Evolution of Measures of the Current Account Balance Under Repatriation of Ownership Policy

The purpose of this appendix is to compare and contrast three measures of the current account balance and their evolution over time in response to a takeover of a foreign-owned company financed by issuing debt. This section abstracts from any induced changes in the exchange rate and the trade balance; any addition to the current account deficit must therefore be financed abroad. The major conclusions are that: (a) the fully adjusted[27] current account balance will initially improve if and only if the real rate of return on equity calculated at the purchase price is greater than the real rate of return on debt; (b) the inflation-adjusted current account balance will initially improve if and only if the rate of dividends paid on equity calculated at the purchase price is greater that the real rate of return on debt; (c) the published current account will only improve in the long run if the real rate of return on equity is greater than the real rate of return on debt; and (d) the ratio of debt to retained earnings will decline over time if the real rate of return on equity is greater than the real rate of return on debt.

The evolution of various measures of the current account balance over time

Let a = rate of retained earnings

d = rate of dividends

π = rate of inflation

r = real rate of interest on debt

F = stock of net bond wealth

DF = change in stock of net bond wealth

Then $a + d$ is the real rate of return on equity.

Let \$1 of equity be purchased by issuing \$1 of debt. Then the stock of net bond wealth at time zero, $F(0) = -1$. The change in the stock of net bond

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[27] That is, the current account balance adjusted for both retained earnings and the inflation premium in interest rates.

wealth (DF) is the sum of the dividends paid on equity $de^{(\pi+a)t}$, where equity grows because of inflation (π) and retained earnings (a), plus the net interest received on debt $(r+\pi)F$, which will be negative in the case analyzed.

$$DF = de^{(\pi+a)t} + (r+\pi)F;\ F(0) = -1 \tag{1}$$

$$F = \frac{(a+d-r)e^{(r+\pi)t}}{r-a} - \frac{(d)e^{(\pi+a)t}}{r-a} \tag{2}$$

in continuous time. The analogous expression in discrete time is:

$$F = \frac{(a+d-r)}{r-a}(1+r+\pi)^t - \frac{(d)}{r-a}(1+\pi+a)^t \tag{3}$$

Current Account, Published (CA_p). The published current account numbers correspond to DF and so are:

$$CA_p = \frac{-d(a+\pi)\ e^{(\pi+a)t}}{r-a} + \frac{(r+\pi)(a+d-r)\ e^{(r+\pi)t}}{r-a} \tag{4}$$

Current Account, Adjusted for Inflation Premium (CA_{aip}). If one adjusts for the inflation premium in interest rates, interest payments are evaluated at the real rate of interest r and so the current account adjusted for the inflation premium is:

$$CA_{aip} = de^{(\pi+a)t} + rF \tag{5}$$

$$= \frac{-ad\ e^{(\pi+a)t}}{r-a} + \left(\frac{rd}{r-a} - r\right)e^{(r+\pi)t} \tag{6}$$

Current Account, Fully Adjusted (CA_{fa}). If the current account is also adjusted for retained earnings (now accruing to Canadians rather than to foreigners):

$$CA_{fa} = (d+a)e^{(\pi+a)t} + rF \tag{7}$$

$$= \frac{(ra-da-a^2)e^{(\pi+a)t}}{c-a} + (\frac{rd}{r-a} - r)e^{(\pi+r)t} \tag{8}$$

Proof of assertions made above

(a) The fully adjusted current account at time 0 is, from equation 7:

$$(d+a)e^{(\pi+a)(0)} + rF(0)$$

$$= d+a-r > 0 \leftrightarrow d+a > r$$

(b) The inflation-adjusted current account at time 0 is, from equation 5:

$$de(\pi+a)(0) + rF(0)$$

$$= d-r > 0 \leftrightarrow d > r$$

(c) The published current account expression, equation 4, will be dominated by $e^{(r+\pi)t}$ in the long run if r>a. Then a+d-r must be greater than 0 for the current account to be positive in the long run. If, on the other hand, r<a, the expression will be dominated by $e^{(a+\pi)t}$ and $-d(a+\pi)/(r-a)>0$. Thus a+d>r is necessary and sufficient for the current account to be positive in the long run.

(d) The ratio of debt (-F) to retained earnings is, from equation 2:

$$\frac{d}{r-a} - \frac{(a+d-r)e^{(r-a)t}}{r-a}$$

Differentiating with respect to t gives

$$-(a+d-r)e^{(r-a)t}$$

and so the ratio falls if a+d>r.

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